



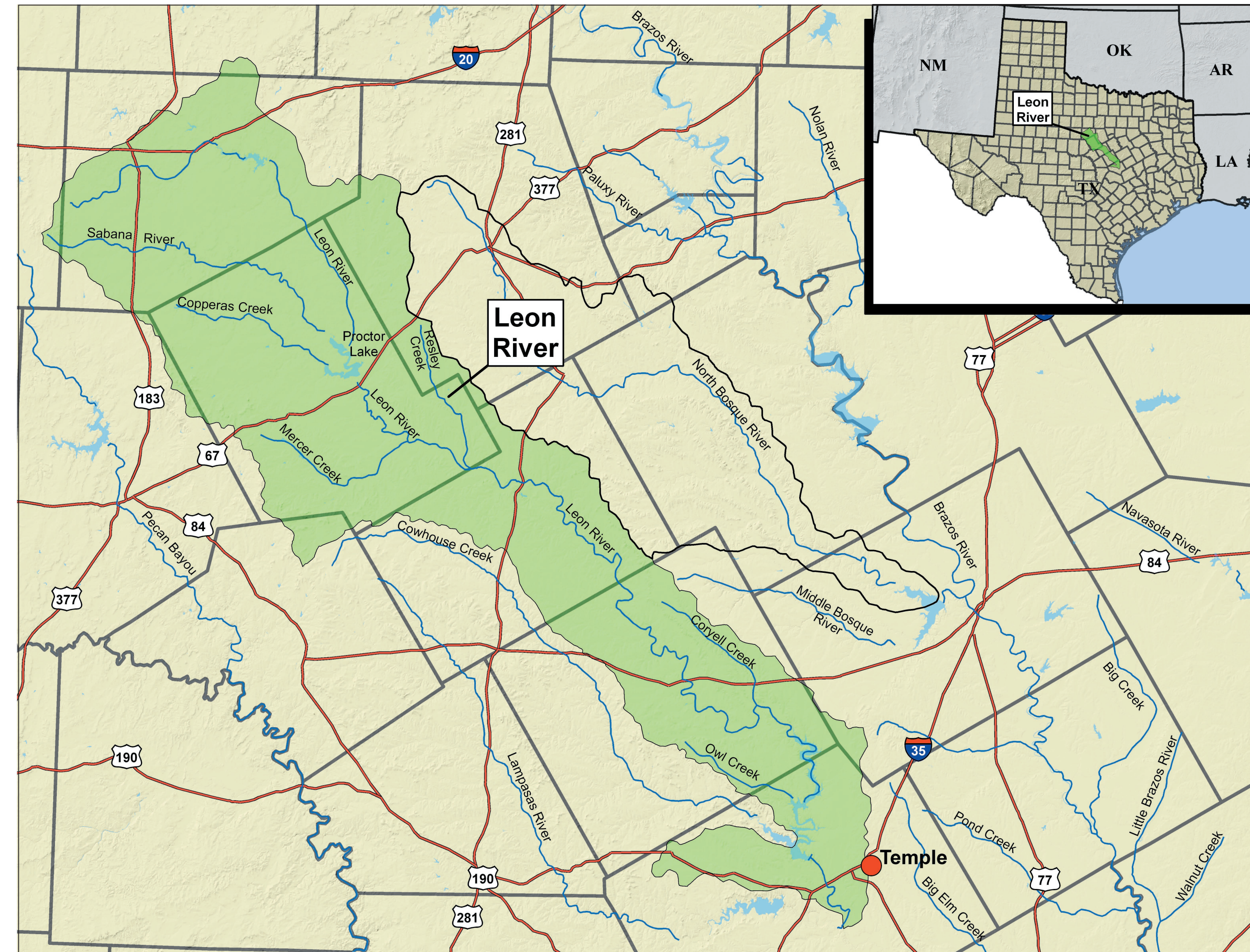
United States Department of Agriculture

Conservation Effects Assessment Project (CEAP)

Leon River Watershed, Texas: 2004-2006



An ARS* Benchmark Research Watershed, one of 24 CEAP watershed projects.



CEAP Assessment

Quantify the effects of management practices on soil quality and water quality and quantity; examine watershed scale impacts and transport mechanisms; and determine the field-scale effects of selected management practices.

Watershed Description

- 1,500,000 acres
- Drains into Lake Belton, a large reservoir that provides water for about 200,000 people.
- 68% pasture, 11% cropland
- Approximately 100 concentrated animal feeding operations (CAFOs).
- Impaired water quality parameter: bacteria

Issues:

Water quality and soil quality impairments are generally associated with the CAFO units and the management and disposal of animal wastes and municipal wastewater.

Water quality impairment results from runoff and point source discharge contaminated with pathogens and/or nutrients.

Changes in soil quality are linked to carbon and nutrient availability and distribution in the soil, and changes in the soil water holding capacity.

*Agricultural Research Service

Approach

Water sampling and sonitoring: Flow, dissolved nutrients (nitrate, ammonia, and phosphorus), suspended sediment, and bacteria

Watershed models: SWAT (Soil and Water Assessment Tool)

Assess practices: Manure management and tillage practices

Communicating Results

Reports documenting impact of selected nutrient management practices on water quality, the impact of animal waste on soil quality, and soil water holding capacity.

Collaborators

- USDA, Natural Resources Conservation Service
- US Geological Survey
- Texas State Soil and Water Conservation Board
- Texas Agricultural Experiment Station
- Texas Cooperative Extension
- Brazos River Authority

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Streamflow measurement on Mustang Creek, a tributary of the Upper Leon River, Texas.



Application of poultry litter to a cultivated field near Riesel, Texas.



Baseflow at a small watershed sampling site near Riesel, Texas.

Timeline

2005

December 1st ARS Benchmark Watersheds progress report

2006

December 2nd ARS Benchmark Watersheds progress report

2007

December 3rd ARS Benchmark Watersheds progress report

2008

December 4th ARS Benchmark Watersheds progress report